REMARKS

Claims 8–11, 16–19, 24–27, 32–35, and 40 are pending in this application. Action on the present application was suspended via the Request for Continued Examination filed on July 2, 2007. Applicants request that suspension of action on the present application be terminated with the filing of the present Supplemental Response.

I. Rejection under 35 U.S.C. §103(a) Relying Upon Aga et al.

Claims 8–11, 16–19, 24–27, 32–35 and 40 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,372,609 to Aga et al.

As set forth in the Amendment filed on June 12, 2007, Aga et al. merely discloses a method of producing an SOI wafer, wherein a base wafer 1 and a bond wafer 2 are prepared (step A); an oxide film 3 is formed on the surface of the bond wafer 2 (step B); the base wafer 1 is superposed on the bond wafer 2 via the oxide film (step D); a delamination wafer 5 is delaminated from an SOI wafer 6 (step E); and a bonding heat treatment is performed so that the bonding between the wafers of the SOI wafer 6 is further strengthened (step F). See col. 5, line 50 – col. 6, line 33 of Aga of et al. Moreover, the Patent Office acknowledges that Aga et al. does not specifically disclose that the thickness of the buried oxide film is reduced to 100 nm or less by heat treatment.

Nowhere does Aga et al. teach or suggest a method of producing an SOI wafer having a buried oxide film with a thickness of less than 100 nm, forming an oxide film having a thickness of 100 nm or more on a surface of at least one of a bond wafer and a base wafer, bonding the bond wafer to the base wafer through the formed oxide film, and making the bond wafer into a thin film, wherein after the oxide film is formed so that the total thickness of the oxide film formed on the surface of at least one of the bond wafer and the base wafer is thicker than a thickness of the buried oxide film that the SOI wafer to be produced has, the bond wafer is bonded to the base wafer through the formed oxide film, the bond wafer is

made into a thin film to form an SOI layer, and thereafter, an obtained bonded wafer is subjected to heat treatment to reduce the thickness of the buried oxide film, and the thickness of the buried oxide film is reduced to less than 100 nm, as required in amended claim 8.

Attached is a Declaration under 37 CFR §1.132 (hereinafter "Rule 132 Declaration"), pursuant to a request from Examiner Rodgers during an interview on May 31, 2007 with Applicants' representative. The Rule 132 Declaration details that SOI wafers produced by the recited method of the present claims (in which an oxide film is formed with a thickness of 100 nm or more and then buried oxide film thickness is reduced to less than 100 nm by heat treatment) achieve unexpected results in avoiding voids and blisters when compared to SOI wafers produced by a method like that of Aga et al in which an oxide film is formed with a thickness of less than 100 nm.

The Examples 1 and 2 of the present application (in accordance to the recited method of the present claims) is the same SOI wafers as Examples 1 and 2 of the experiments detailed in the Rule 132 Declaration (see page 2 of Rule 132 Declaration and Examples 1 and 2 of present application). As described in the Rule 132 Declaration, the Comparative Examples 1' and 2' are SOI wafers that were produced under the same conditions as Comparative Examples 1 and 2 of the present application, and were subjected to heat treatment at 1200°C for 4 hours. Comparative Examples 1" and 2" are SOI wafers that were produced under the same conditions as Comparative Examples 1 and 2 of the present application, and were subjected to heat treatment at 1200°C for 14 hours. Comparative Examples 1 and 2 of the present application, prepared without a formed oxide film having a thickness of 100 nm or more and without reducing the buried oxide film to less than 100 nm, are representative of the results that would be obtained following the teachings of Aga et al.

Applicants submit that SOI wafers formed from the recited method (Examples 1 and 2 as described in the present application and the Rule 132 Declaration) exhibit superior

properties, such as unexpectedly reduced occurrences of voids and blisters when compared to SOI wafers derived from processes in which the oxide film has a thickness of less than 100 nm upon formation such as in Aga et al. (Comparative Examples 1 and 2 as described in the present application and Comparative Examples 1', 1", 2' and 2" as described in the Rule 132 Declaration) (see page 3 and Table 1 of Rule 132 Declaration and Table 1 of the application). Moreover, Applicants submit that the SOI wafers derived from processes in which the oxide film has a thickness of less than 100 nm upon formation such as in Aga et al. also fail to exhibit similar properties as SOI formed from the recited method because once voids and blisters are generated (as in Comparative Examples 1 and 2 of the present application and Comparative Examples 1', 1", 2' and 2" as described in the Rule 132 Declaration, the voids and blisters cannot be eliminated by heat treatment, even by a longer high temperature heat treatment such as used to reduce the buried oxide layer thickness.

Therefore, Applicants submit that Aga et al. fails to disclose the recited method as required in claim 8.

In view of the foregoing, Aga et al. fails to disclose each and every limitation of independent claim 8 and thus cannot anticipate claim 8, or any of the additional features recited in the dependent claims thereof. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

II. Conclusion

In view of the foregoing, as well as the amendments and arguments in the June 12, 2007 Amendment After Final Rejection, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 8–11, 16–19, 24–27, 32–35, and 40 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

William P. Berridge
Registration No. 30,024

Brian C. Anscomb
Registration No. 48,641

WPB:BCA/hs

Attachment:
Rule 132 Declaration

Date: July 31, 2007

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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